COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Valley Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS

Johns Manville
Edinburg, Shenandoah County, Virginia
Permit No. VRO80764

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Johns Manville has applied for renewal of its Title V Operating Permit for its Fesco board manufacturing facility in Edinburg, Virginia. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact:_____ Date: *6/27/05*

Air Permit Manager:_____ Date: *6/27/05*

Deputy Regional Director:_____ Date: 6/29/05

FACILITY INFORMATION

Permittee
Johns Manville
182 Johns Manville Drive
Edinburg, Virginia 22824

Facility
Johns Manville
182 Johns Manville Drive
Edinburg, Virginia 22824

County-Plant Identification Number: 51-171-0046

SOURCE DESCRIPTION

NAICS 327992 - Ground or Treated Mineral and Earth Manufacturing

Johns Manville International, Inc. operates a Fesco board manufacturing facility in Edinburg, Virginia. The facility produces Fesco board for industrial and commercial roofing insulation. The basic operations at the facility include raw material handling and processing, product drying, and product finishing and packaging.

The facility is a Title V major source of particulate matter with an aerodynamic diameter of less than 10 microns (PM-10). This source is located in an attainment area for all pollutants and is not a PSD major source. The facility was previously permitted under a new source review (NSR) permit issued on August 20, 1973, and a minor NSR permit for the installation and operation of a taper saw issued on July 23, 1992.

CHANGES TO EXISTING TITLE V PERMIT

The following are changes to the existing Title V permit since the issuance of the Title V permit significant modification on August 2, 2004:

- Correct the stack identification for the edge saw (P-0030c) from S-0030 to S-0003 and the pollution control device from a fabric filter (BH-0030) to a cyclone (CC-0003) followed by a fabric filter (BH-0003) (Section II).

- Correct the size/rated capacity for the taper saw (P-0030a), cant saw (P-0030b) and accessory line Fesco board handling (P-0031) from 5,000 lb perlite/hr to 5,000 lb Fesco board/hr (Section II).

- Revise the appropriate conditions to reflect the corrections for the stack identification for the edge saw (P-0030c) from S-0030 to S-0003 and the pollution control device from a fabric filter (BH-0030) to a cyclone (CC-0003) followed by a fabric filter (BH-0003) (Section V).

- Include an additional requirement as being not applicable to the permitted facility (Section VII).

COMPLIANCE STATUS

The facility is inspected once every two years. The most recent inspection was conducted on August 8, 2003, and the facility was found to be operating in compliance with all applicable requirements.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility consist of the following:

Table I. Significant Emission Units

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
Raw Material Handling and Processing							
P-0001	S-0001	Mix Stations	650 lb dry binder/hr	Fabric Filter	BH-0001	PM/PM-10	8/20/73
P-0002	S-0002	Two (2) Perlite Silos	685 tons perlite ore (total)	Fabric Filter	BH-0002	PM/PM-10	8/20/73
P-0022	S-0022 thru S-0025**	7 MMBtu/hr Natural Gas-Fired Perlite Expander	5,000 lb perlite/hr	Cyclone	CC-0022	PM/PM-10	8/20/73
				Fabric Filter	BH-0022 - BH-0025**		
P-0023	S-0022 thru S-0025**	7 MMBtu/hr Natural Gas-Fired Perlite Expander	5,000 lb perlite/hr	Cyclone	CC-0023	PM/PM-10	8/20/73
				Fabric Filter	BH-0022 - BH-0025**		
P-0024	S-0022 thru S-0025**	7 MMBtu/hr Natural Gas-Fired Perlite Expander	5,000 lb perlite/hr	Cyclone	CC-0024	PM/PM-10	8/20/73
				Fabric Filter	BH-0022 - BH-0025**		
P-0025	S-0022 thru S-0025**	7 MMBtu/hr Natural Gas-Fired Perlite Expander	5,000 lb perlite/hr	Cyclone	CC-0025	PM/PM-10	8/20/73
				Fabric Filter	BH-0022 - BH-0025**		

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
P-0026	S-0022 thru S-0025**	7 MMBtu/hr Natural Gas-Fired Perlite Expander	5,000 lb perlite/hr	Cyclone	CC-0026	PM/PM-10	8/20/73
				Fabric Filter	BH-0022 - BH-0025**		
P-0027	S-0022 thru S-0025**	7 MMBtu/hr Natural Gas-Fired Perlite Expander	5,000 lb perlite/hr	Cyclone	CC-0027	PM/PM-10	8/20/73
				Fabric Filter	BH-0022 - BH-0025**		
Product Drying							
P-0009		Five (5) Zone Fesco Board Dryer with a total gas-fired rated capacity of 210 MMBtu/hr	30,000 lb Fesco board/hr	-	-	-	8/20/73
	S-0009	Zone 1 Fesco Board Dryer					
	S-0010	Zone 2 Fesco Board Dryer					
	S-0014	Zone 3 Fesco Board Dryer		Wet Scrubber	SC-0009	PM/PM-10	
		Zone 4 Fesco Board Dryer					
		Zone 5 Fesco Board Dryer					
Product Finishing and Packaging							
P-0003, P-0004, P-0006 thru P-0008 and P-0030c	S-0003	Trim saws, utility saws, Fesco handling and edge saw	30,300 lb Fesco board/hr	Cyclone	CC-0003	PM/PM-10	8/20/73
				Fabric Filter	BH-0003		
P-0043	S-0043	Board Separators	2,600 lb Fesco board/hr	Fabric Filter	BH-0043	PM/PM-10	7/23/92

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
P-0030a	S-0030	Taper saw	5,000 lb Fesco board/hr	Fabric Filter	BH-0030	PM/PM-10	7/23/92
P-0030b and P-0031		Cant saw and accessory line Fesco handling					8/20/73

*The Size/Rated capacity is provided for informational purposes only and is not an applicable requirement.
**The six perlite expanders (P-0022 - P-0027) each exhaust through one cyclone (CC-0022 - CC-0027) followed by a common plenum, four fabric filters (BH-0022 - BH-0025) and four exhaust stacks (S-0022 - S-0025).

EMISSIONS INVENTORY

A copy of the 2003 annual emission update is attached as Attachment A. Emissions are summarized in the following tables.

Table II. 2003 Actual Criteria Pollutant Emissions

	Criteria Pollutant Emissions (tons/year)				
Emission Unit	VOC	CO	SO_2	PM-10	NO_x
Fesco Board Manufacturing	4.11	25.64	0.19	38.44	32.86
Total	4.11	25.64	0.19	38.44	32.86

Table III. 2003 Actual Hazardous Air Pollutant Emissions

Pollutant	Hazardous Air Pollutant Emissions in Tons/Year
None	---

EMISSION UNIT APPLICABLE REQUIREMENTS

Raw Material Handling and Processing (P-0001, P-0002 and P-0022 - P-0027)

Limitations

There are no limitations from the NSR permit issued on August 20, 1973. The conditions contained in the NSR permit were not included in the Title V permit because the requirements have been fulfilled. These requirements were the submittal of quarterly progress reports until plant start-up and the submittal of detailed specifications on all air pollution control equipment intended to be installed during facility construction. A copy of the permit is enclosed as Attachment B.

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5-50-80, New Source Standard for Visible Emissions
9 VAC 5-40-260, Existing Source Standard for Particulate Matter (AQCR 1-6)

Note that the perlite expanders are not subject to the existing source standard for sulfur dioxide in 9 VAC 5-40-280 because the maximum heat input of each perlite expander is less than 10 million Btu per hour.

The following conditions in the Title V permit were established pursuant to these Codes:

Condition III.A.2:	Particulate emissions from the mix stations stack (S-0001), the perlite silos stack (S-0002) and each perlite expander (P-0022 - P-0027) shall not exceed the process weight limit as determined by the equation $E = 4.10P^{0.67}$, where E is the emission limit in lbs/hr and P is the process weight rate in tons/hr.
Condition III.A.5:	Visible emissions from each perlite expander stack (S-0022 - S-0025), the mix stations stack (S-0001) and the perlite silos stack (S-0002) shall not exceed twenty (20) percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed thirty (30) percent opacity. This condition applies at all times except during startup, shutdown, or malfunction.

The following conditions were established pursuant to 9 VAC 5-80-110 in order to provide additional assurance that the aforementioned existing emission standards for the raw material handling and processing operations are met:

Condition III.A.1:	The approved fuel for the perlite expanders (P-0022 - P-0027) is natural gas. A change in the fuel may require a permit to modify and operate.
Condition III.A.3:	Particulate emissions from the mix stations (P-0001) and the perlite silos (P-0002) shall be controlled by a fabric filter. Each fabric filter shall be provided with adequate access for inspection.
Condition III.A.4:	Particulate emissions from the perlite expanders (P-0022 - P-0027) shall be controlled by six cyclones (one per each perlite expander) followed by a common plenum and four fabric filters. Each cyclone and fabric filter shall be provided with adequate access for inspection.

Compliance Assurance Monitoring (CAM)

Even though the mix stations (P-0001) and perlite expanders (P-0022 - P-0027) have a control device to control particulate emissions, CAM does not apply to these emission units because the uncontrolled particulate emissions from each emission unit are less than 100 tons/yr.

Although the perlite silos (P-0002) have a fabric filter to control particulate emissions, the operations of these units are limited by the annual Fesco board production limit of 110,000 tons because the perlite stored in the silos is used in the production of Fesco board. As a result, CAM does not apply to the perlite silos (P-0002) because the uncontrolled particulate emissions are less than 100 tons per year.

Monitoring and Recordkeeping

The permit requires each fabric filter (BH-0001, BH-0002 and BH-0022 - BH-0025) to be equipped with a device to continuously measure the differential pressure drop across the fabric filter. The device shall be installed in an accessible location and shall be maintained by the permittee such that it is in proper working order at all times.

The permit also requires the permittee to conduct an annual visual internal inspection on the cyclones (CC-0022 - CC-0027) to insure structural integrity. The date, time and name of the person performing each inspection, the results of each inspection and any maintenance performed shall be recorded.

The permit requires operation of a fabric filter for the mix stations (P-0001) and the perlite silos (P-0002) to demonstrate compliance with the particulate matter and visible emission requirements. Therefore, a properly operating fabric filter can achieve compliance with the process weight rate particulate emissions limit. Estimated particulate emissions based on calculations included in the Title V application are compared to the particulate limit:

Emission Unit	Pollutant	Maximum Controlled Emission Rate (lbs/hr)	Emission Limit (lbs/hr)
Mix Stations	PM/PM-10	0.21	1.93
Perlite Silos	PM/PM-10	0.45	40.0

If the fabric filter is operating properly, compliance with the 20% opacity limit for the mix stations stack (S-0001) and perlite silos stack (S-0002) can be achieved since there should be no visible emissions from the stacks. This is the case because the fabric filter eliminates the particulates which are the source of the visible emissions. Therefore, if visible emissions are seen from the mix stations stack (S-0001) or perlite silos stack (S-0002) it can be reasonably assumed that there is a problem with the fabric filter. The permit contains a requirement for the permittee to conduct weekly inspections of the mix stations stack (S-0001) and perlite silos stack (S-0002). Each inspection shall include an observation of the presence of visible emissions and the pressure drop across the fabric filter. If during the inspection visible emissions are observed from the mix stations stack (S-0001), timely corrective action shall be taken such that the stack resumes operation with no visible emissions. If during the inspection visible emissions are observed from the perlite silos stack (S-0002), a visible emissions evaluation (VEE) shall be conducted in accordance with 40 CFR Part 60, Appendix A, EPA Method 9, unless corrective action is taken

such that the stack resumes operation with no visible emissions. The VEE shall be conducted for a minimum of six (6) minutes. If any of the observations exceed twenty (20) percent, the VEE shall be conducted for a total of sixty (60) minutes. All observations, VEE results and corrective actions taken shall be recorded.

The weekly inspections of the mix stations stack (S-0001) and the perlite silos stack (S-0002) will satisfy the periodic monitoring requirement for the visible emission limitations. Frequent checks for visible emissions will limit malfunctions of the fabric filters. As long as the fabric filters are operating properly, there is little likelihood of violating the visible emission limitation. The fabric filters will limit the amount of particulate that are emitted thereby limiting visible emissions.

The permit requires operation of a cyclone and fabric filter for each perlite expander (P-0022 - P-0027) to demonstrate compliance with the particulate matter and visible emission requirements. Therefore, as long as the control devices are properly maintained and operated, compliance with the process weight rate particulate emissions limit can be achieved. As shown below, estimated particulate emissions based on calculations included in the Title V application are compared to the particulate limit.

Emission Unit	Pollutant	Maximum Controlled Emission Rate (lbs/hr)	Emission Limit (lbs/hr)
Perlite Expander (each)	PM/PM-10	2.14	7.58

If the cyclones and fabric filters are operating properly, compliance with the 20% opacity limit for each perlite expander stack (S-0022 - S-0025) can be achieved since there should be no visible emissions from these stacks. This is the case because these particulate control devices eliminate the particulates which are the source of the visible emissions. Therefore, if visible emissions are seen from a perlite expander stack, it can be reasonably assumed that there is a problem with one of the control devices. The permit contains a requirement for the permittee to perform a tiered periodic monitoring approach for conducting inspections of each perlite expander stack (S-0022 - S-0025) as follows:

- Johns Manville will be required to initially conduct a daily inspection of each perlite expander stack (S-0022 - S-0025). Each inspection shall include an observation of the presence of visible emissions and the pressure drop across each fabric filter. If during the inspection visible emissions are observed, a visible emission evaluation (VEE) shall be conducted in accordance with 40 CFR Part 60, Appendix A, EPA Method 9, unless corrective action is taken such that the stack resumes operation with no visible emissions. The VEE shall be conducted for a minimum of six minutes. If any of the observations exceed the applicable opacity limit, the VEE shall be conducted for a total of 60 minutes or until a violation of the opacity limit for that stack has been documented, whichever period is shorter.

> If 30 consecutive daily inspections are performed on any given stack and no visible emissions are present, then the inspections for that stack may be reduced to once per week. However, as soon as visible emissions are noted during a weekly inspection, or when requested by DEQ, the inspections must then be performed daily for that stack.

The permit includes requirements for maintaining records of all monitoring and testing required by the permit. These records include:

- The pollutant-specific emission factors and the equations used to demonstrate compliance with Condition III.A.2.
- Fuel usage records for the perlite expanders.
- The log of annual inspections for the cyclones as required by Condition III.B.2.
- Inspection records as required by Condition III.B.3, Condition III.B.4 and Condition III.B.5.

Testing

The permit does not require source tests. A table of test methods has been included in the permit if testing is performed. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

No specific reporting has been included in the permit for the raw material handling and processing operations.

Streamlined Requirements

There are no streamlined requirements for the raw material handling and processing operations.

Product Drying (P-0009)

Limitations

There are no limitations from the NSR permit issued on August 20, 1973. The conditions contained in the NSR permit were not included in the Title V permit because the requirements have been fulfilled. These requirements were the submittal of quarterly progress reports until plant start-up and the submittal of detailed specifications on all air pollution control equipment intended to be installed during facility construction. A copy of the permit is enclosed as Attachment B.

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5-50-80, New Source Standard for Visible Emissions
9 VAC 5-40-260, Existing Source Standard for Particulate Matter (AQCR 1-6)
9 VAC 5-40-280, Existing Source Standard for Sulfur Dioxide
9 VAC 5-50-20, New Source Compliance

The following conditions in the Title V permit were established pursuant to these Codes:

Condition IV.A.4: Emissions from the Fesco board dryer zone 1 stack (S-0009) shall not exceed the limits specified below:

Sulfur Dioxide	110.9	lbs/hr		
Particulate Matter	2.5	lbs/hr	9.2	tons/yr

Condition IV.A.5: Emissions from the Fesco board dryer zone 2 stack (S-0010) shall not exceed the limits specified below:

Sulfur Dioxide	110.9	lbs/hr		
Particulate Matter	6.5	lbs/hr	23.8	tons/yr

Condition IV.A.6: Emissions from the wet scrubber stack (S-0014) shall not exceed the limits specified below:

Sulfur Dioxide	332.6	lbs/hr		
Particulate Matter	16.2	lbs/hr	59.4	tons/yr

Condition IV.A.7: Visible emissions from the Fesco board dryer zones 1 and 2 stacks (S-0009 and S-0010) and the wet scrubber stack (S-0014) shall not exceed twenty (20) percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed thirty (30) percent opacity. This condition applies at all times except during startup, shutdown, or malfunction.

Condition IV.A.8: Fesco board dryer (P-0009) emissions shall be controlled by proper operation and maintenance. Fesco board dryer operators shall be trained in the proper operation of all such equipment. Training shall consist of a review and familiarization of the facility's operating instructions, at minimum

The following conditions were established pursuant to 9 VAC 5-80-110 in order to provide additional assurance that the aforementioned existing emission standards for the product drying operations are met:

Condition IV.A.1:	The approved fuel for the Fesco board dryer (P-0009) is natural gas. A change in the fuel may require a permit to modify and operate.
Condition IV.A.3:	Particulate emissions from the Fesco board dryer zones 3, 4 and 5 shall be controlled by a wet scrubber.

Compliance Assurance Monitoring (CAM)

In order to establish total potential precontrol particulate emissions from the Fesco board dryer to be less than the pollutant-specific major source threshold of 100 tons per year for CAM applicability, Johns Manville proposed a Fesco board production limit of 110,000 tons per year. As a result, the following condition was established pursuant to 9 VAC 5-80-110 in order to provide assurance that potential precontrol particulate emissions for the product drying operations are limited below 100 tons per year:

Condition IV.A.2:	The production of Fesco board shall not exceed 110,000 tons per year, calculated monthly as the sum of each consecutive 12-month period.

Monitoring and Recordkeeping

The permit requires the Fesco board dryer to be equipped with devices to continuously measure the temperature, fan speed and stack damper position for each Fesco board dryer zone. Each monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. If the manufacturer's written requirements or recommendations are not available, the permittee shall establish their own written procedures. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the Fesco board dryer is operating.

The permit contains a requirement that the Fesco board dryer monitoring devices used to continuously measure the temperature, fan speed and stack damper setting for each zone are observed by the permittee with a frequency of not less than once per day. If the measured parameter is outside its corresponding specified operating range, the permittee shall take corrective action beginning with an evaluation of the deviation to determine the action required to correct the situation and shall notify the Director, Valley Region. The permittee shall keep a log of all observations, deviations and corrective actions taken.

The permit requires the wet scrubber to be equipped with devices to continuously measure the scrubber water flow rate and the differential pressure drop across the scrubber demister pads. Each monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. If the manufacturer's written requirements or recommendations are not available, the permittee shall establish their own written procedures. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the control device is operating.

The wet scrubber monitoring devices used to continuously measure the scrubber water flow rate and the differential pressure drop across the scrubber demister pads shall be observed by the permittee with a frequency of not less than once per day. If the measured parameter is outside its corresponding specified operating range (i.e., a scrubber water flow rate less than 500 gallons per minute or a differential pressure drop greater than 80% of 1.0 inch of water), the permittee shall take corrective action beginning with an evaluation of the deviation to determine the action required to correct the situation and shall notify the Director, Valley Region. The permittee shall keep a log of all observations, deviations and corrective actions taken.

The permit contains a requirement to perform a tiered periodic monitoring approach for conducting inspections of the Fesco board dryer zones 1 and 2 stacks (S-0009 and S-0010) and the wet scrubber stack (S-0014) as follows:

- Johns Manville will be required to initially conduct a daily inspection of the Fesco board dryer zones 1 and 2 stacks (S-0009 and S-0010) and the wet scrubber stack (S-0014). Each inspection shall include an observation of the presence of visible emissions. If during the inspection visible emissions are observed, the permittee has the option of either taking timely corrective action (initiated within four hours of the inspection such that the stack resumes operation and there are no visible emissions within 24 hours of the initial observation) or conducting a visible emission evaluation (VEE). The VEE shall be conducted on the stack in accordance with 40 CFR Part 60, Appendix A, EPA Method 9. Each VEE shall be conducted for a minimum period of six minutes. If any of the observations exceed the applicable opacity limit for the stack, the VEE shall be conducted for a total of 60 minutes. If the 60-minute VEE results in a violation of the applicable opacity limit, timely corrective action shall be taken such that the stack resumes operation with no visible emissions and the permittee shall notify the Director, Valley Region. If the permittee records three 60-minute VEE violations of the opacity limit for the stack within a calendar year quarter, a performance test shall be conducted for particulate matter (PM) on the stack which exceeded the limit in accordance with 40 CFR Part 60, Appendix A, EPA Method 5 and 40 CFR Part 51, Appendix M, EPA Method 202. The test shall be performed and demonstrate compliance with the applicable particulate emissions limit within 90 days of the exceedance of the opacity limit or within one calendar year of the previous stack test of that stack, whichever occurs later. Also, the permittee shall conduct a

concurrent VEE in accordance with 40 CFR Part 60, Appendix A, EPA Method 9, on the stack being tested. If 30 consecutive daily inspections are performed on a given stack and no visible emissions are present, then the inspections for that stack may be reduced to once per week. However, as soon as visible emissions are observed and verified at any time by a certified Method 9 observer, the weekly inspections show visible emissions, or when requested by DEQ, the inspections must then be performed daily for that stack.

The permittee will maintain fuel usage records for the Fesco board dryer to demonstrate compliance with the sulfur dioxide emission limitations. There is reasonable assurance that violations of the emission limitation should not occur if only natural gas, the permitted fuel, is burned in the Fesco board dryer because even while each Fesco board dryer zone operates at maximum rated capacity the limit cannot be exceeded. Estimated sulfur dioxide emissions for each Fesco board dryer zone are based on the AP-42 natural gas emission factor and the maximum rated capacity of each Fesco board dryer zone. As shown below, these emissions are compared to the sulfur dioxide emissions limits for the Fesco board dryer zones 1 and 2 stacks (S-0009 and S-0010) and the wet scrubber stack (S-0014).

Stack	Pollutant	Maximum Emission Rate (lbs/hr)	Emission Limit (lbs/hr)
Zone 1 (S-0009)	Sulfur Dioxide	0.03	110.9
Zone 2 (S-0010)		0.03	110.9
Zone 3 (S-0011)		---	---
Zone 4 (S-0012)		---	---
Zone 5 (S-0013)		---	---
Scrubber (S-0014)		0.07	332.6

The permit includes requirements for maintaining records of all monitoring and testing required by the permit. These records include:

- Fuel usage records for the Fesco board dryer.
- The monthly and annual throughput of natural gas (in million cubic feet) for the Fesco board dryer (P-0009). The annual throughput shall be calculated monthly as the sum of each consecutive 12-month period.
- The monthly and annual production of Fesco board. The annual production shall be calculated monthly as the sum of each consecutive 12-month period.
- A log of daily observations and all deviations and corrective actions taken as required in Condition IV.B.2.
- A log of inspections, all corrective actions taken and the results of all VEEs and performance tests performed on each Fesco board dryer stack as required in Condition IV.B.3.
- The results of all VEEs performed on each Fesco board dryer stack as required in Condition IV.B.4.
- A log of daily observations and all deviations and corrective actions taken as required

in Condition IV.B.6.
- A log of inspections, all corrective actions taken and the results of all VEEs and performance tests performed on the wet scrubber stack (S-0014) as required in Condition IV.B.7.
- The results of all VEEs performed on the wet scrubber stack (S-0014) as required in Condition IV.B.8.
- The results of the performance test and concurrent VEE as required in Condition IV.C.1 and Condition IV.C.2.

The permittee will also maintain records of the required Fesco board dryer (P-0009) training including a statement of time, place and nature of training provided. The permittee shall have available good written operating procedures and a maintenance schedule for the Fesco board dryer (P-0009). These procedures shall be based on the facility's recommendations, at minimum.

Testing

The permit requires a performance test to be conducted for particulate matter (PM) on the Fesco board dryer zones 1 and 2 stacks (S-0009 and S-0010) and the wet scrubber stack (S-0014) to demonstrate compliance with the PM emission limits. The test shall be conducted once each permit term, at a frequency not to exceed five years from the previous performance test that demonstrated compliance with the PM emission limits, using 40 CFR Part 60, Appendix A, EPA Method 5 and 40 CFR Part 51, Appendix M, EPA Method 202. Concurrently with the performance test, a visible emissions evaluation is required to be conducted on the Fesco board dryer zones 1 and 2 stacks (S-0009 and S-0010) and the wet scrubber stack (S-0014) in accordance with 40 CFR Part 60, Appendix A, EPA Method 9.

A table of test methods has been included in the permit if testing is performed. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

No specific reporting has been included in the permit for the product drying operations.

Streamlined Requirements

There are no streamlined requirements for the product drying operations.

Product Finishing and Packaging (P-0003, P-0004, P-0006 - P-0008, P-0030a - P-0030c, P-

0031 and P-0043)

Limitations

The following limitations are State BACT requirements from the minor NSR permit issued on July 23, 1992. A copy of the permit is enclosed as Attachment C.

Condition V.A.3:	Particulate emissions from the taper saw operation (P-0030a) shall be controlled by a Pactecon Model 214-6 fabric filter baghouse or equivalent with a design collection efficiency of 99.9 percent.
Condition V.A.6:	Visible emissions from the fabric filter baghouse exhaust vent (S-0030) controlling the emissions from the taper saw operation (P-0030a) and any other woodworking tools (P-0030b and P-0031) connected by transferring hoods and ductwork shall not exceed five (5) percent opacity.

There are no limitations from the NSR permit issued on August 20, 1973. The conditions contained in the NSR permit were not included in the Title V permit because the requirements have been fulfilled. These requirements were the submittal of quarterly progress reports until plant start-up and the submittal of detailed specifications on all air pollution control equipment intended to be installed during facility construction. A copy of the permit is enclosed as Attachment B.

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5-50-80, New Source Standard for Visible Emissions
9 VAC 5-40-260, Existing Source Standard for Particulate Matter (AQCR 1-6)

The following conditions in the Title V permit were established pursuant to these Codes:

Condition V.A.1:	Particulate emissions from the trim saws, Fesco handling, utility saws and edge saw stack (S-0003), the board separators stack (S-0043) and the taper and cant saws and accessory line Fesco handling stack (S-0030) shall not exceed the process weight limit as determined by the equation $E = 4.10P^{0.67}$, where E is the emission limit in lbs/hr and P is the process weight rate in tons/hr.
Condition V.A.5:	Visible emissions from the trim saws, Fesco handling, utility

saws and edge saw stack (S-0003) and the board separators stack (S-0043) shall not exceed twenty (20) percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed thirty (30) percent opacity. This condition applies at all times except during startup, shutdown, or malfunction.

The following conditions were established pursuant to 9 VAC 5-80-110 in order to provide additional assurance that the aforementioned existing emission standards for the product finishing and packaging operations are met:

Condition V.A.2:	Particulate emissions from the board separators (P-0043) and the cant saw and accessory line Fesco handling (P-0030b and P-0031) shall be controlled by a fabric filter. Each fabric filter shall be provided with adequate access for inspection.
Condition V.A.4:	Particulate emissions from the trim saws, utility saws, Fesco handling and edge saw (P-0003, P-0004, P-0006 - P-0008 and P-0030c) shall be controlled by a cyclone followed by a fabric filter. Each cyclone and fabric filter shall be provided with adequate access for inspection.

Compliance Assurance Monitoring (CAM)

Even though the board separators (P-0043), the taper, cant and edge saws (P-0030a - P-0030c) and the accessory line Fesco handling (P-0031) have a control device to control particulate emissions, CAM does not apply to these emission units because the uncontrolled particulate emissions from each emission unit are less than 100 tons per year.

Although the trim saws (P-0003) and Fesco handling (P-0006 - P-0008) have control devices to control particulate emissions, the operations of these units are limited by the annual Fesco board production limit of 110,000 tons for the Fesco board dryer because these units process Fesco board directly from the Fesco board dryer. As a result, CAM does not apply to these emission units because the uncontrolled particulate emissions from each emission unit are less than 100 tons per year.

Monitoring and Recordkeeping

The permit requires each fabric filter (BH-0003, BH-0030 and BH-0043) to be equipped with a device to continuously measure the differential pressure drop across the fabric filter. The device shall be installed in an accessible location and shall be maintained by the permittee such that it is in proper working order at all times.
The permit also requires the permittee to conduct an annual visual internal inspection on the

cyclone (CC-0003) to insure structural integrity. The date, time and name of the person performing each inspection, the results of each inspection and any maintenance performed shall be recorded.

The permit requires operation of a cyclone and fabric filter for the trim saws, Fesco handling, utility saws and edge saw (P-0003, P-0004, P-0006 - P-0008 and P-0030c) to demonstrate compliance with the particulate matter and visible emission requirements. Therefore, as long as the control devices are properly maintained and operated, compliance with the process weight rate particulate emissions limit can be achieved. As shown below, estimated particulate emissions based on calculations included in the Title V application are compared to the particulate limit.

Emission Unit	Pollutant	Maximum Controlled Emission Rate (lbs/hr)	Emission Limit (lbs/hr)
Trim saws, Fesco handling, utility saws and edge saw	PM/PM-10	7.71	25.3

If the cyclones and fabric filters are operating properly, compliance with the 20% opacity limit for the trim saws, Fesco handling, utility saws and edge saw stack (S-0003) can be achieved since there should be no visible emissions from these stacks. This is the case because these particulate control devices eliminate the particulates which are the source of the visible emissions. Therefore, if visible emissions are seen from the trim saws, Fesco handling, utility saws and edge saw stack (S-0003), it can be reasonably assumed that there is a problem with one of the control devices. The permit contains a requirement for the permittee to conduct weekly inspections of the trim saws, Fesco handling, utility saws and edge saw stack (S-0003). Each inspection shall include an observation of the presence of visible emissions and the pressure drop across the fabric filter. If during the inspection visible emissions are observed, a visible emission evaluation (VEE) shall be conducted in accordance with 40 CFR Part 60, Appendix A, EPA Method 9, unless corrective action is taken such that the stack resumes operation with no visible emissions. The VEE shall be conducted for a minimum of six (6) minutes. If any of the observations exceed twenty (20) percent, the VEE shall be conducted for a total of sixty (60) minutes. All observations, VEE results and corrective actions taken shall be recorded.

The weekly inspections of the trim saws, Fesco handling, utility saws and edge saw stack (S-0003) will satisfy the periodic monitoring requirement for the visible emission limitation. Frequent checks for visible emissions will limit malfunctions of the cyclones and fabric filters. As long as these particulate control devices are operating properly, there is little likelihood of violating the visible emission limitation. These particulate control devices will limit the amount of particulate that are emitted thereby limiting visible emissions.

The permit requires operation of a fabric filter for the board separators (P-0043), the taper saw operation (P-0030a) and the cant saw and accessory line Fesco handling (P-0030b and P-0031) to

demonstrate compliance with the particulate matter and visible emission requirements. Therefore, a properly operating fabric filter can achieve compliance with the process weight rate particulate emissions limit. Estimated particulate emissions based on calculations included in the Title V application are compared to the particulate limit:

Emission Unit	Pollutant	Maximum Controlled Emission Rate (lbs/hr)	Emission Limit (lbs/hr)
Board Separators	PM/PM-10	4.11	4.89
Taper and cant saws and accessory line Fesco handling	PM/PM-10	2.57	7.58

If the fabric filter is operating properly, compliance with the 5% opacity limit for the taper and cant saws and accessory line Fesco handling stack (S-0030) can be achieved since there should be no visible emissions from this stack. This is the case because the fabric filter eliminates the particulates which are the source of the visible emissions. Therefore, if visible emissions are seen from the taper and cant saws and accessory line Fesco handling stack (S-0030) it can be reasonably assumed that there is a problem with the fabric filter. The permit contains a requirement for the permittee to conduct weekly inspections of the taper and cant saws and accessory line Fesco handling stack (S-0030). Each inspection shall include an observation of the presence of visible emissions and the pressure drop across each fabric filter. If during the inspection visible emissions are observed, a visible emissions evaluation (VEE) shall be conducted in accordance with 40 CFR Part 60, Appendix A, EPA Method 9, unless corrective action is taken such that the stack resumes operation with no visible emissions. The VEE shall be conducted for a minimum of six (6) minutes. If any of the observations exceed five (5) percent, the VEE shall be conducted for a total of sixty (60) minutes. All observations, VEE results and corrective actions taken shall be recorded.

If the fabric filter is operating properly, compliance with the 20% opacity limit for the board separators stack (S-0043) can be achieved since there should be no visible emissions from this stack. This is the case because the fabric filter eliminates the particulates which are the source of the visible emissions. Therefore, if visible emissions are seen from the board separators stack (S-0043) it can be reasonably assumed that there is a problem with the fabric filter. The permit contains a requirement for the permittee to conduct weekly inspections of the board separators stack (S-0043). Each inspection shall include an observation of the presence of visible emissions and the pressure drop across the fabric filter. If during the inspection visible emissions are observed, timely corrective action shall be taken such that the stack resumes operation with no visible emissions. All observations and corrective actions taken shall be recorded.

The weekly inspections of the taper and cant saws and accessory line Fesco handling stack (S-0030) and the board separators stack (S-0043) will satisfy the periodic monitoring requirement for the visible emission limitations. Frequent checks for visible emissions will limit malfunctions of the fabric filters. As long as the fabric filters are operating properly, there is little likelihood of

violating the visible emission limitation. The fabric filters will limit the amount of particulate that are emitted thereby limiting visible emissions.

The permit includes requirements for maintaining records of all monitoring and testing required by the permit. These records include:

- The pollutant-specific emission factors and the equations used to demonstrate compliance with Condition V.A.1.
- The log of annual inspections for the cyclone.
- Inspection records are required by Condition V.B.3, Condition V.B.4 and Condition V.B.5
- Manufacturer's or DEQ-approved documentation for the design collection efficiency of each fabric filter installed for the taper saw operation (P-0030a).

Compliance Assurance Monitoring (CAM)

Even though the board separators (P-0043), the taper, cant and edge saws (P-0030a - P-0030c), the accessory line Fesco handling (P-0031) and the utility saws (P-0004) have a control device to control particulate emissions, CAM does not apply to these emission units because the uncontrolled particulate emissions from each emission unit are less than 100 tons/yr.

Although the trim saws (P-0003) and Fesco handling (P-0006 - P-0008) have control devices to control particulate emissions, the operations of these units are limited by the annual Fesco board production limit of 110,000 tons because these units process Fesco board directly from the Fesco board dryer. As a result, CAM does not apply to these emission units because the uncontrolled particulate emissions from each emission unit are less than 100 tons/yr.

Testing

A table of test methods has been included in the permit if testing is performed. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

No specific reporting has been included in the permit for the product finishing and packaging operations.

Streamlined Requirements

The taper and cant saws and accessory line Fesco handling (P-0030a, P-0030b and P-0031) have a common stack. The cant saw and accessory line Fesco handling (P-0030b and P-0031) are subject to the visible emission limitation in 9 VAC 5-50-80 (New Source Standard for Visible Emissions). However, the minor NSR permit dated July 23, 1992 for the taper saw (P-0030a)

requires that visible emissions from this unit not to exceed 5% opacity at all times. Therefore, since the 5% opacity limit for the tape saw (P-0030a) is more stringent than the Virginia Administrative Code Standard for visible emissions, 9 VAC 5-50-80, only the more stringent opacity was included in the permit for these units.

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110, that apply to all Federal operating permit sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

STATE ONLY APPLICABLE REQUIREMENTS

The permittee did not identify any state-only applicable requirements in their application. Therefore, no state-only applicable requirements have been included in the permit.

FUTURE APPLICABLE REQUIREMENTS

The permittee did not identify any future applicable requirements in their application and the staff is unaware of any requirements that they could become subject to during the life of the Title V permit. Therefore, no future applicable requirements have been included in the permit.

INAPPLICABLE REQUIREMENTS

Inapplicable requirements identified by the permittee and included in the Title V permit are as follows:

- 9 VAC 5 Chapter 40, Article 25 (Rule 4-25), Emission Standards for Volatile Organic Compound Storage and Transfer Operations, applies only to facilities located in VOC emissions control areas. Johns Manville is not located in a VOC emissions control area.

- 9 VAC 5 Chapter 40, Article 37 (Rule 4-37), Emission Standards for Petroleum Liquid Storage and Transfer Operations, applies only to facilities located in VOC emissions control areas. Johns Manville is not located in a VOC emissions control area.

- 40 CFR 60, Subpart Ka - Standards of Performance for Storage Vessels for Petroleum Liquids, because all of the storage vessels at the facility have a capacity not greater than 40,000 gallons and were constructed before May 18, 1978.

- 40 CFR 60, Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels, because there are no storage vessels with storage capacities greater than or equal to 75 cubic meters (19,812.9 gallons) that were constructed, reconstructed or modified after July 23, 1984.

- 40 CFR 63, Subpart LLLLL - National Emissions Standards for Asphalt Processing and Asphalt Roofing Manufacturing, because the facility does not meet the definition of an asphalt processing or asphalt roofing manufacturing facility as defined in 40 CFR 63.8698.

The Department has determined that the following requirements are not applicable:

- 9 VAC 5 Chapter 40, Article 17 (Rule 4-17), Emission Standards for Woodworking Operations, because the product finishing operations are not considered "woodworking operations" as defined in 9 VAC 5-40-2260 of Rule 4-17.

- 40 CFR 60, Subpart K - Standards of Performance for Storage Vessels for Petroleum Liquids, because all of the storage vessels at the facility have a capacity not greater than 40,000 gallons.

COMPLIANCE PLAN

Johns Manville is currently in compliance with all applicable requirements. No compliance plan was included in the application or in the permit.

INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units, which remain unchanged from the initial Title V permit, include the following:

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
P-0005	Glue Laminator	9 VAC 5-80-720 B	VOC, benzene, toluene, xylene, ethylbenzene, hexane, hydrogen sulfide	
P-0028	Perlite Use Bin	9 VAC 5-80-720 B	PM/PM-10	

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
P-0035	Glue Holding Tank	9 VAC 5-80-720 B	VOC, benzene, toluene, xylene, ethylbenzene, hexane, hydrogen sulfide	
P-0038	Glue Mix Tank	9 VAC 5-80-720 B	VOC, benzene, toluene, xylene, ethylbenzene, hexane, hydrogen sulfide	
P-0040	Sealer Holding Tank	9 VAC 5-80-720 B	VOC, benzene, toluene, xylene, ethylbenzene, hexane, hydrogen sulfide	
P-0041	Sealer Mix Tank	9 VAC 5-80-720 B	VOC, benzene, toluene, xylene, ethylbenzene, hexane, hydrogen sulfide	
P-0042	Sealer Application	9 VAC 5-80-720 B	VOC, benzene, toluene, xylene, ethylbenzene, hexane, hydrogen sulfide	
P-0043	Asphalt Emulsion Tank	9 VAC 5-80-720 B	VOC, benzene, toluene, xylene, ethylbenzene, hexane, hydrogen sulfide	
P-0045	Asphalt Storage Tank	9 VAC 5-80-720 B	VOC, benzene, toluene, xylene, ethylbenzene, hexane, hydrogen sulfide	40,000 gallons
P-0046	Asphalt Emulsion Measuring Tank	9 VAC 5-80-720 B	VOC, benzene, toluene, xylene, ethylbenzene, hexane, hydrogen sulfide	
P-0047	Propane Refueling of Forklifts	9 VAC 5-80-720 B	VOC	

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
P-0048	Perlite Rail Unloading	9 VAC 5-80-720 B	PM/PM-10	
P-0049	Broke System (Process Water Recycling)	9 VAC 5-80-720 B	VOC, benzene, toluene, xylene, ethylbenzene, hexane, hydrogen sulfide	
P-0051	Diesel Fire Pump	9 VAC 5-80-720 C	N/A	115 horsepower
P-0053	Pump House Heater	9 VAC 5-80-720 C	N/A	0.105 MMBtu/hr
P-0054	Four (4) Makeup Air Heaters	9 VAC 5-80-720 C	N/A	6 MMBtu/hr each
P-0055	Asphalt Tank Heater	9 VAC 5-80-720 C	N/A	0.8 MMBtu/hr
	Propane Storage Tank	9 VAC 5-80-720 B	VOC	
	Propane Vaporizer	9 VAC 5-80-720 C	N/A	<5MMBtu/hr
	Parts Washers	9 VAC 5-80-720 B	VOC	

[1]The citation criteria for insignificant activities are as follows:
9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application
9 VAC 5-80-720 B - Insignificant due to emission levels
9 VAC 5-80-720 C - Insignificant due to size or production rate

CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. Therefore, all portions of the Title V renewal application are suitable for public review.

PUBLIC PARTICIPATION

A public notice regarding the draft permit was placed in The Shenandoah Valley Herald, Woodstock, Virginia, on May 11, 2005, announcing a 30-day public comment period. EPA was sent a copy of the draft permit and notified of the public notice on May 11, 2005, and concurrently reviewed the draft permit as a proposed permit. West Virginia was sent a copy of the public notice in a letter dated May 11, 2005. All persons on the Title V mailing list were also sent a copy of the public notice in a letter dated May 11, 2005.

Public comments were accepted from May 11, 2005 to June 10, 2005. No comments were received from the public or the affected state regarding the draft permit. EPA's comment period ended on June 25, 2005. No comments were received from EPA.

ATTACHMENTS

Attachment A - 2003 Annual Emissions Update
Attachment B - August 20, 1973 Minor NSR Permit
Attachment C - July 23, 1992 Minor NSR Permit

Attachment A

2003 Annual Emissions Update

Attachment B

August 20, 1973 Minor NSR Permit

Attachment C

July 23, 1992 Minor NSR Permit